Utah Centers of Excellence Program
Description of Centers Selected for Funding Fiscal 2005-2006

For information on a specific Center
Please contact the respective Technology Transfer Office

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Technology Transfer Office
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Acoustics Research (BYU)
Commercializing active sound control technology with superior ability to both reduce noise in varied settings (vehicle cabins, computer fans and telecommunications, e.g.) and modify sounds for commercial benefit.

Advanced Communications Technology (BYU)
Improved wireless communications and data transmission for both military and commercial markets is achieved through the use of MIMO (multiple-input multiple-output) technology with multiple antenna elements.

Miniature Unmanned Air Vehicles (BYU)
Rapid design of airframes and miniaturized autopilot and guidance systems for tiny UAVs that can be operated by novices have earned the attention of both military and civilian agencies.

Direct Machining and Control (BYU) **Assigned a Business Team**
Developing programming that allows a manufacturer to automatically optimize part production by adjusting for the actual specifications and tolerances of each item.

Compliant Mechanisms (BYU) **Graduated**
Develops commercial versions of devices that obtain their motion from the deflection of flexible parts rather than from pin joints. A superior and cost-saving electrical switch marketed by a Utah firm is one good example.

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Alternate Strategies of Parasite Removal (U/U)
Preparing to commercialize a safe, nontoxic and rapid treatment for Pediculosis (head lice), a multibillion-dollar, increasingly resistant problem afflicting some 25% of children by the time they're teenagers.

Biomedical Microfluidics (U/U)
Engineering technology that controls the movement of fluids in channels smaller than a human hair; micropumps that can deliver tiny quantities of drugs and improved devices for DNA screening are some product examples.

Computational Design & Testing of Novel Materials (U/U)
Commercializing powerful computational packages capable of designing novel materials and predicting the electrical, mechanical and structural characteristics of electromechanical devices, especially nanostructured materials and components.

Global Knowledge Management (U/U)
Developing Knowledge Fusion and Dynamic Knowledge Refreshing software to enable next-generation data mining technology.

Homogeneous DNA Analysis (U/U)
Developing a simple and inexpensive method for genotyping DNA samples from patients or disease organisms right in a doctor’s office.

Interactive Ray-Tracing & Photo-Realistic Visualization (U/U)
Producing a commercial form of two programs that can process 3-D graphics based on large data sets found in CAD, film animation and scientific models, which existing GPUs cannot handle.

Magnetic Sensor & Actuator Materials (U/U)
Working to commercialize a novel magnetostrictive alloy exhibiting a large physical effect in response to small magnetic fields, which may find use in applications from antilock brakes to nanomachining and ultrasonic devices.

Microarray Technology (U/U)
Developing a superior microarray platform for the molecular diagnostics and research markets with improved sensitivity, specificity and throughput.

Modified Activated Carbons Technology (U/U)
Developing improved products for gas and water treatment, as well as metal recovery or removal, based on modifications to granular activated carbon.

Nanosize Inorganic Material Powders (U/U)
Commercializing a novel, cost-effective process (molecular decomposition) for the manufacturing of nanosize powders, the building blocks for myriad nanotechnology applications, as well as nanostructured ceramic membranes and other devices.

Therapeutic Biomaterials (U/U)
Developing applications of biopolymers and hydrogels for clinical use in wound repair, prevention of surgical adhesions, and extending the life of donated organs.

Titanium Boride Surface Hardening (U/U)
Commercializing harder, longer-lived components and devices – ranging from armor to bearings and orthopedic implants - for the military, biomedical and industrial markets.

Acoustic Cooling Technology (U/U) **Assigned a Business Team**
Developing novel miniature acoustic power conversion devices without moving parts for energy recovery from waste heat.

CROMDI (U/U) **Graduated**
The Center for the Representation of Multi-Dimensional Information developed new visualization technology that facilitates the rapid and accurate analysis of large quantities of complex and continuously changing data, such as an anesthesiology product licensed to GE.

Petroleum Research (U/U) **Graduated**
Developed cost-effective solutions for liquid hydrocarbon production, handling and transportation that optimize petroleum recovery; process control and production automation in oil and gas fields.

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Advanced Imaging LADAR (USU)
Commercializing land-based and airborne high-resolution, laser-based 3D color-imaging platforms for both military and civilian use.

Advanced Satellite Manufacturing (USU)
Leveraging the capabilities of Utah's Space Dynamics Laboratory to develop and commercialize a low cost, modular small satellite platform for commercial, research, and military missions.

High-Speed Information Processing (USU)
Designing fast algorithms for Application Specific Integrated Circuits, which have value in most military and compact consumer electronic devices.

Control of Flow in Manufacturing (USU) **(Pre-Center Candidate - Assigned a Business Team)**
Applying Computational Fluid Dynamics to improve manufacturing processes including particle sorting and Electrical Discharge Machining (EDM).

Profitable Uses of Agricultural Byproducts (USU) **Graduated**
Developed a cost-effective technology to treat animal wastes, generating both “Biogas” that can be used to produce energy, and nutrients to be used in soil amendments.

Smart Sensors (USU) **Graduated**
A Utah spinout company is now commercializing sensor-based products, including a device that can detect and localize faults in aircraft wiring from any accessible location.